MAKE YOUR POULTRY FARM PAY

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MAKE YOUR POULTRY FARM PAY

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To make your poultry farm pay is a big job. If you do it well, poultry farming will provide good rewards. If you do not do it well, the penalties are severe.

With careless management and production methods, a dairyman or a crop farmer can still produce a fair amount of milk and crops and stay in business for some time. Under the same conditions, a poultryman would probably find egg production low and the income too small to pay all the bills.

In making your poultry farm pay, you not only must use good practices in managing the birds, but you must also consider:

1. The reasons why incomes of poultrymen vary so much from farm to farm and from year to year.
2. What these reasons mean in organizing and operating your poultry farm business.

This bulletin deals with these factors, their importance, and the standards and goals to use in examining your business to find where improvements might be made.

WHAT HISTORY SHOWS ABOUT POULTRYMEN'S INCOMES

Over a long period of years, the New York State College of Agriculture has obtained hundreds of business records from commercial poultrymen. A study of these records shows what incomes poultrymen have made and why. From this you may obtain ideas on the organization and operation of your poultry farm in order to make a good income over a long period of years.

The measure of profits most often used on poultry farms is "labor income." This is what you have left for your year's work after all farm

expenses have been paid and a charge has been made for the value of unpaid labor and the use of the money invested in the farm. In addition to labor income, you have a house in which to live, eggs, poultry meat, perhaps a garden, and other farm privileges.

The incomes of poultrymen vary widely from year to year. In 1926, the labor income on the poultry farms studied averaged $1,840 (table 1). Three years later (1929) incomes had risen to an average of $2,250, but in three more years (1932) had fallen to an average of only $320 per farm.

In the following years, incomes rose and reached an average of $1,600 in 1941. In 1955, a study of 63 poultry farms revealed an average labor income per farm of $1,083. In 1957–1958, the labor income on 104 poultry farms averaged $3,902.

The incomes of poultrymen vary widely from farm to farm in any one year. The amount of variation in selected years is shown in figure 1. In 1929, which was a good year for poultrymen, 55 of 148 poultrymen made labor incomes of more than $2,400. Even so, 12 failed to make more than $300 during the year.

In 1932, a poor year for poultrymen, only 9 of 119 poultrymen made more than $2,400, but 57, or almost one-half, of the poultrymen made less than $300. In 1941, 27 of 120 poultrymen made more than $2,400 and 17 made less than $300.

In 1957–1958, 61 out of 104 poultrymen made more than $2,400 labor income, but 24 still made less than $300.

Table 1. LABOR INCOMES BY YEARS
1240 Poultry Farms
New York State, 1926 to 1957–1958

Year	Farm records	Average labor income
	Number	*Dollars*
1926	153	$1,840
1929	148	2,250
1930	123	1,590
1931	126	720
1932	119	320
1933	136	550
1934–1940	148	1,320
1941	120	1,600
1955	63	1,083
1957-1958	104	3,902
All years	1,240	1,512

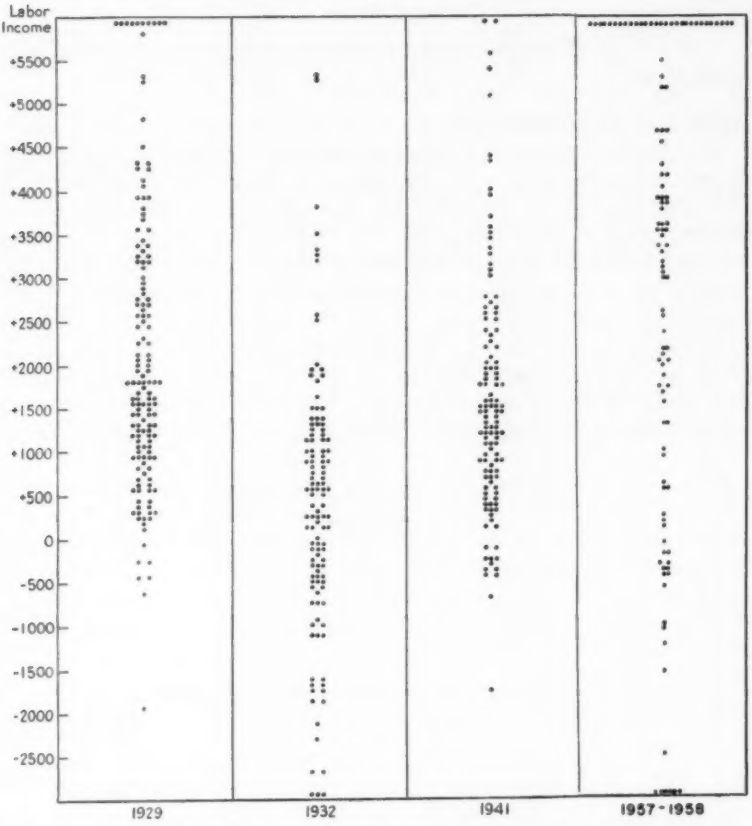

Figure 1. Variation in incomes of poultrymen 1929, 1932, 1941, and 1957–1958. Each dot in the chart represents one poultry farm.

WHY ALL POULTRYMEN MAKE MORE MONEY IN SOME YEARS THAN IN OTHER YEARS

The two main factors responsible for the wide income variations from year to year are: (1) the general price level and (2) the egg-feed ratio. As a poultryman, you should know about these because of the effect they have upon your income.

General Price Level

The average of all prices in the United States is taken to be the general price level.

Why it is important

The general price level is important for two reasons. First, it has never stayed at any one level very long (figure 2). When the price level falls, prices of farm products usually fall first and farther than do prices of factory products. The things you buy then cost more than the things you sell. It is hard to make ends meet under such conditions. When the price level rises, on the other hand, conditions are usually favorable for you.

Secondly, egg prices tend to move with the general price level. In other words the things that cause the general price level to be high or low, rising or falling, also cause egg prices to be high or low, rising or falling. The level of egg prices, however, is not always the same as the

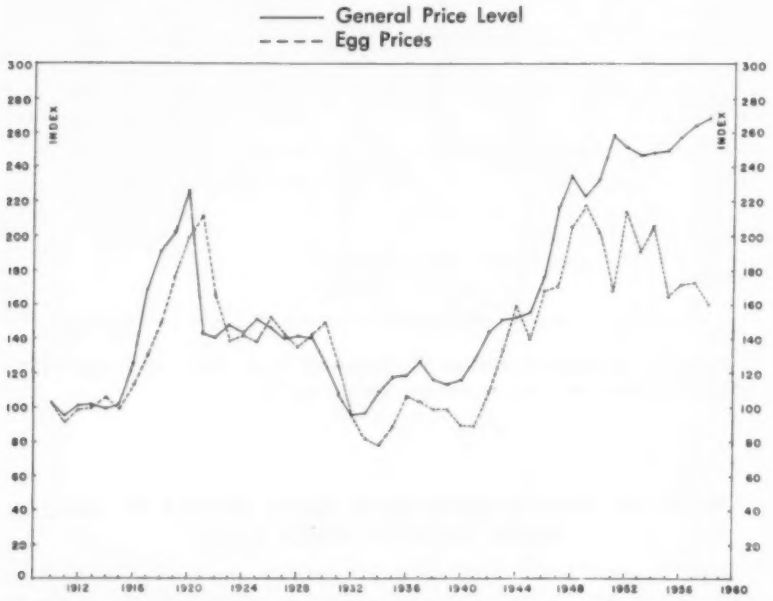

Figure 2. The general price level is important because (1) it has never been stable for any length of time, and (2) in the past egg prices have tended to move with it. In recent years, however, this relationship has not held true.

level of all prices. This is because the supply and demand for eggs is not the same as the supply and demand for all other commodities.

When the supply of eggs is large as compared with demand, prices of eggs may be below the general level of all prices. Conversely, when the supply is small, prices may rise above the general price level.

What to do about it

The movements of the general price level result from many combinations of a number of worldwide and countrywide factors. As a result, the general price level is like the weather. It cannot be controlled. Its movements cannot always be forecast correctly.

You try to keep informed about the weather by reading the forecast in the paper or listening to it on the radio. You should keep informed about prices by reading and studying the agricultural outlook statements prepared by your State College of Agriculture, and the market facts and forecasts sections in poultry industry magazines and newspapers.

If it is a rainy day, you work in or near the buildings. If it is a warm sunny day, you cultivate the corn or paint the buildings. In other words, you adjust your work to fit the weather, not the weather to fit your work. With the general price level, as with the weather, you adjust your farming operations to fit prices, and not prices to fit your farming operations.

Some practices, such as maintaining sound finances, increasing egg production per layer, and using labor efficiently, are always good to follow. The use of some other practices, however, depends upon prices.

If prices are falling, some things you should do are:

1. Keep only a small supply of feed on hand.
2. Take better care of your machinery and equipment.
3. Depend less upon help that works for high wages.
4. Consider the feasibility of selling more eggs and poultry at retail.

If prices are rising, some things you should do are:

1. Keep a fairly large supply of feed on hand.
2. Put the farm buildings, machinery, and equipment into shape.
3. Consider some expansion of the business.

At all times study and plan your poultry business to keep it operating at top efficiency.

Egg-Feed Ratio

The egg-feed ratio refers to the relationship between the price of eggs and the price of feed. This figure shows how many pounds of feed a dozen eggs will buy at a given time.

Why it is important

Feed, most of which is purchased, makes up about 60 percent of the cost of producing eggs. It is a large cash cost and must be one of the first bills paid as you go along. The amount of money you have left after paying the weekly feed bill is the amount you have to cover the other costs of business and living. When feed costs are high compared with the prices of eggs, the amount you have to pay on the other bills and to live on is low; when feed costs are low, the amount you have to pay on the other bills and to live on is high. The egg-feed ratio, or the pounds of feed a dozen eggs would buy, varies from year to year and helps to cause the incomes of all poultrymen to vary from one time to another. In some years, a dozen eggs would buy a lot of feed, while in other years it would buy less (figure 3).

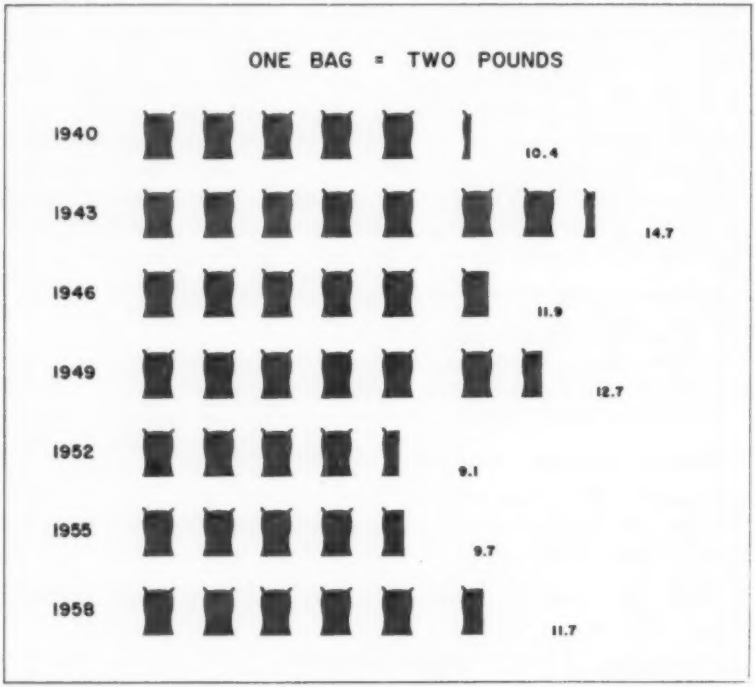

Figure 3. Pounds of feed a dozen eggs would buy in the United States in selected years. This helps to explain why incomes of poultrymen vary from year to year.

A comparison of egg prices with feed prices every week will give you a good indication of whether egg production is more or less profitable than at some other time. By dividing the price of eggs by the price of a pound of feed, you get the pounds of feed that a dozen eggs would buy.

What to do about it

The egg-feed ratio is like the general price level in that you can't do much about it. At any time egg prices may be favorable or unfavorable when compared with feed prices. It depends upon the supply of and demand for eggs, and the supply of and demand for feed. These factors are countrywide in nature, and you can't do much to change either one of them.

You can take advantage of a favorable ratio or lessen the effects of an unfavorable ratio by:

1. Increasing egg production per layer.
2. Cutting down on feed wastage.

WHY SOME POULTRYMEN MAKE MORE MONEY THAN OTHERS IN ANY ONE YEAR

Some poultrymen make more money than others in a given year because of differences in management practices, all of which are under the control of the individual poultryman. The six most important factors in poultry farm management are:

1. Size of laying flock
2. Eggs laid per layer
3. Eggs produced per man
4. Mortality (deaths)
5. Feed efficiency
6. Use of capital

In a way, a poultry farm is like a car. The six factors listed are the "cylinders" that make the money just as a car's cylinders make the power. When your car is firing on all cylinders, you get a smooth ride. If some of the cylinders are not firing, you get a less comfortable ride. If too few cylinders are firing, not only will the car be hard to start but it might not be able to make all the power needed. It would have to be pulled by the farm tractor or a truck from some garage.

When your poultry farm is firing on all "cylinders," you get a good income and usually have some extra money that may be stored in the bank or paid on farm debts. If some "cylinders" are not firing, then you usually get less money for your work; if too few are firing, there might not be enough money to cover all expenses. Then you would need to draw

upon some other source for money, which in this case is your bank account or a mortgage on the farm. You can't call the garage, or buy a new bank account. You have to put the "cylinders" in firing order yourself, and quickly. Otherwise the bills will pile up higher and higher, and soon someone else will be starting in the chicken business and you will be looking for another job.

The rest of this bulletin deals with the "cylinders" that affect profits on your poultry farm or the reasons why some poultrymen make more money than others in any one year. The importance of each factor, standards and goals by which you can plan your business, and what you can do to keep your poultry business in good running order are discussed.

The farm business records used as a basis for this bulletin were obtained from commercial poultry farms over a period of more than 30 years. During this time egg prices varied widely (figure 4), as did the incomes of poultrymen. Now we will look at some of the reasons why some poultrymen make a living during periods of low egg prices, while others do not.

Size of Laying Flock

In New York State, the number of layers kept on commercial poultry farms varies widely from farm to farm. Some have only 500 to 1,000 layers, but others have several thousands. In 1930, according to the census, there were just 750 poultry farms with more than 1,000 layers. Seventy-five of these farms had more than 2,500 layers.

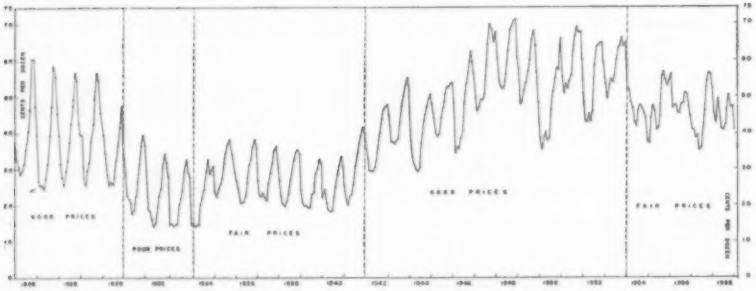

Figure 4. Monthly farm price of eggs in New York State, 1926 to 1958.

By 1954, there were 1,492 farms with 1,600 or more layers. Of this number, 449 had 3,200 or more layers. The trend toward larger flocks is continuing at an accelerated pace.

Relation to income

In general, the more layers you have the higher your income. The actual level of your income, however, depends upon egg prices. During periods of good prices, farms with large flocks make much larger incomes than do those with small flocks.

In periods of poor prices, large businesses usually lose most of the advantages they normally have and, if conditions are severe, may make less money than small businesses. With poultry farms, large flocks may suffer more than small flocks, but the relation of size of flock to income is usually not reversed. This is because feed prices, which make up the biggest part of the cost of producing eggs, usually drop more than do egg prices. This gives a favorable egg-feed ratio and helps to offset the effects of poor prices.

In a study of 104 poultry farms in 1957–1958, one-third of the farms with the highest labor incomes also had the largest flocks, averaging 5,689 layers (table 2). The middle income group had an average flock size of 2,983 layers, and the lowest income group averaged 2,835 layers.

Table 2. LABOR INCOME AND PRODUCTION FACTORS
104 Poultry Farms, By Income Groups[1]
New York, 1957–1958

Income and production factors	35 High labor income farms	35 Middle labor income farms	34 Low labor income farms	All farms
Labor Income				
Labor income per farm	$9,970	$3,184	$ −661	$4,211
Total number of farm operators	41	39	38	118
Labor income per operator	$8,511	$2,858	$ −592	$3,712
Production Factors[2]				
Average number of layers	5,689	2,983	2,835	3,845
Eggs produced per layer (number)	217	208	200	208
Eggs sold per layer (number)	213	202	197	204
Layer mortality (percent)	16	14	16	15
Chick and pullet mortality (percent)[3]	7	8	9	8
Man equivalent (number)	2.3	1.6	1.7	1.9
Dozen eggs sold per man	41,430	34,984	29,206	35,996
Price received per dozen eggs (cents)	44	43	42	43
Feed per dozen eggs produced (pounds)	5.9	6.3	5.9	6.0

[1]Groupings based on labor income per farm.
[2]Information was not available for each farm for every item.
[3]To 150 days, including extras.

There are four important reasons why large flocks pay best. First of all, you have more eggs and poultry to sell. If you are able to make a profit on one dozen eggs or one pound of poultry meat, then selling more eggs or meat produces more income. Of course, if you failed to make a profit in some years, then selling more would mean a greater loss. Poultrymen with a large volume of products to sell can afford to give more attention to the job of marketing. This helps to get better prices.

In the second place, you make better use of labor, equipment, and buildings. Large flocks do not mean that each man works more hours. More often you find that the owners of small flocks work the most hours. With small flocks, much time is spent getting ready to do and to finish jobs. You can obtain feed for 5,000 hens just about as quickly as for 1,000 hens. It doesn't take five times longer.

Many items of equipment, such as a farm truck and a manure spreader, are needed for even small flocks, yet they will do the work for a large flock. Only one operator's house is needed on a farm with a large flock. This is just the same as for a farm with a small flock. The point in regard to the use of labor, equipment, and buildings is this: doubling the size of the flock does not always double the amount of labor, equipment, or buildings needed. All of which means that costs are reduced and incomes raised.

The third reason is that you have some advantages in buying and selling. You get a discount in price if you buy a carload of feed rather than just a ton or two. Special markets that pay good prices are often available to the large but not to the small producers.

A fourth reason is that the number of eggs laid per layer in large flocks is just as high as in small flocks.

How many layers to have

The number of layers for you to keep depends upon the amount of labor available, the buildings you have, and the amount of money you have or can get. In general, you should aim for the following goals:

1. If you are running a specialized poultry farm, then you should think in terms of at least 5,000 layers. Considering that there is usually the help of more than one person available, a reasonable goal would be to have at least 3,000 layers per man working on your farm.
2. If most of your eggs are sold at retail, a flock size of 2,500 layers is recommended.
3. If you are running a farm on which poultry is an important but not the major source of income, you should have a flock of at least 1,500 layers. A flock much smaller than 1,500 layers probably would not be efficient.

Some commercial poultrymen in New York State have more than 10,000 layers. If you have an average of 3,000 to 5,000 layers, however, your flock may be large enough for an efficient operation.

Making the business bigger

Poultry is one of the best enterprises for a specialized farm. The men are kept busy each day, and the income is distributed throughout the year. In addition, there are several different phases of poultry farming that are real advantages in making your business bigger. Often you need to, and can, enlarge your business with little additional money invested.

Some of the ways to increase the size of your poultry business are:

1. Build new buildings or remodel old ones to make room for more layers.
2. Grow roasters or capons if they have proved profitable, during the time when the brooding facilities are not being used to raise flock replacement pullets.
3. Convert the brooding facilities to laying houses and purchase pullets for flock replacement.
4. Sell hatching eggs if a reasonably long selling season is available.
5. Sell eggs and poultry meat direct to consumers, retail stores, or restaurants and hotels.
6. Raise pullets for sale to other poultrymen.
7. If land and equipment are available, grow some crops.

Eggs Laid per Layer

The number of eggs laid per layer on commercial poultry farms in New York State has been increasing for many years. In the early 1930's, production averaged about 140 eggs per layer. By 1945, production per layer had risen to about 175 eggs and by 1958 to 209 eggs per layer. While the increase in the rate of production has not been regular from year to year, it has averaged about two eggs, or one and one-half percent, each year. Nowhere else in agriculture has the production per unit increased as rapidly for so long a period of time.

Relation to income

The higher the number of eggs laid per layer, the lower your cost of producing eggs and the higher your income. The actual difference in incomes resulting from rates of production varies from time to time, depending upon prices.

There is a big advantage in having high rates of production when prices are good. During periods of good prices, poultrymen who have high rates

of production per layer will naturally fare better than poultrymen whose flock production rates are low.

Getting a high rate of production is most important, however, if you wish to make a reasonable income when prices are low. When prices are good, even poultrymen with low production have relatively good incomes. When, however, prices are poor, poultrymen with low production rates might be lucky to break even.

In 1957–1958, a study of 104 poultry farms showed that one-third of the producers with the highest labor incomes produced an average of 217 eggs per layer (table 2), compared with 208 eggs for the middle income group and 200 eggs per layer for the low income group.

Why high production per layer pays best

High egg production per layer pays best because the cost of getting extra eggs is usually less than the value of the eggs you get. Feed, labor, buildings, and equipment are all used more efficiently.

The time required to do many jobs, such as cleaning pens, watering, feeding, or gathering eggs, does not increase as fast as production. The dropping pits can be cleaned as quickly in a pen where the birds are laying at a high rate as in a pen where they are laying at a low rate. It does not take much more time, if any, to feed hens laying 250 eggs per year than hens laying only 200, nor does it take much longer to do many other jobs.

High production per layer as a way to use labor more efficiently is most important because labor costs are high and probably will continue to be high for a long time. The time required to clean, size, and pack the eggs, however, increases about as fast as production. That is why we are likely to see a more rapid shift of these jobs from farms to egg handling stations.

Buildings and equipment, as well as other costs, do not increase nearly so fast as production rates. For the most part, these are fixed costs. High production then means that these costs are spread "thinner" over the eggs produced.

How many eggs to get per layer

The number of eggs you should get per layer is limited by:

1. The egg laying ability of the birds.
2. Beyond a certain point doing things to get more eggs will not pay.
3. Even when a flock is in so-called full production, each bird does not lay an egg every day.

You are dealing with living things and you just cannot turn them on, speed them up, and turn them off like a machine. Then too, it is not always possible to have all the things that affect production under control all the time.

In general, the most successful poultrymen get about 250 eggs per layer during the year. This is a little more than three dozen above the average for commercial farms. Production beyond this level is desirable if you can get it without too much extra cost. Birds that lay 300 or more eggs a year are widely publicized and talked about, but they are still relatively scarce.

Getting more eggs per layer

The job of getting more eggs per layer can best be handled by making use of the information that you already have or that is available from your State College of Agriculture.

In brief, the things you can do to get more eggs per layer are:

1. Purchase chicks bred for high egg production.
2. Do an outstanding job of raising your replacement pullets.
3. Provide comfortable housing for the layers, which means the use of well insulated and well ventilated buildings.
4. Use high efficiency feeds.
5. Provide adequate feed and water facilities.
6. Maintain an all-pullet flock.
7. Generally follow good management practices.

Quite a few hatcheries in New York State sell chicks that are bred to lay more eggs than the state average. Your job is to get such chicks, and then to give them proper care. This is important because your income in the years ahead depends largely upon how well you do these things.

With the high quality stock now available, it should not be necessary to do much culling during the first seven months that pullets are housed and laying. After seven months, culling to remove the poor layers helps to keep the flock laying at a high rate throughout the year.

Hens lay more eggs in their first, or pullet, year than in any other year. It is generally agreed that production declines about 15 percent in the second year. This means that a hen that lays 210 eggs the first year will lay less than 180 eggs the next year, a reduction of more than 30 eggs. Eggs produced by yearling hens are not of as high quality as those produced by their younger sisters. Therefore, commercial poultrymen producing market eggs generally should keep all pullet flocks.

Eggs Produced per Man

Labor is the second most important cost on many poultry farms, and it is important that it be used efficiently. The number of eggs produced per man shows how efficiently the labor supply is used. Not only does

this measure of efficiency consider how many layers are cared for per man, but how well the job is done.

The quantity of eggs produced per hour of labor on poultry farms has been increasing for many years. In the mid-1930's, about 75 eggs were produced per hour of labor on selected New York farms. By the early 1940's production was averaging slightly more than 90 eggs per hour of labor. In a study of 64 poultry farms in 1955, the number of eggs produced per hour of labor averaged 164.

Relation to income

In general, the more eggs you produce per man the higher your income. The actual incomes will vary from time to time depending upon the level of egg prices.

During periods of good prices, the farms producing the largest number of eggs per man make the highest incomes. During periods of poor prices, poultry farms that have a low production of eggs per man are likely not to break even. The incomes of those with high production per man will drop sharply also, but are more likely to remain in the black. This emphasizes the importance of producing a large number of eggs per man when prices are low if you want a reasonable income left for yourself.

In a 1957–1958 study of 104 poultry farms, one-third of the farms with the highest average labor incomes also produced the highest number of eggs per man. These high income farms sold 41,430 dozen eggs per man, compared to 34,984 dozens for the middle income farms and 29,206 dozen eggs per man for the low income farms (table 2). The farms selling the highest number of eggs per man also had a larger average labor force; therefore, the labor was used more efficiently than on the farms with lower incomes.

Why more eggs produced per man pays best

More eggs per man means that the labor bill is spread over more eggs. By so doing, the cost is spread "thinner," and the profit margin is increased.

Over a long period of years, the tendency has been for the wages of hired men to rise. As recently as 1948 7.6 cases of eggs were required to pay the monthly wages of a hired man (figure 5). The trend continued upward through the following decade. In 1956 12.6 cases of eggs were needed to pay the monthly wages of a hired man.

Because so many eggs are needed to pay the labor bill, it is easy to see why the poultrymen who produce a lot of eggs per man make the best incomes. It is also easy to see why those who are not producing so many eggs per man cannot pay wages high enough to get or keep good help.

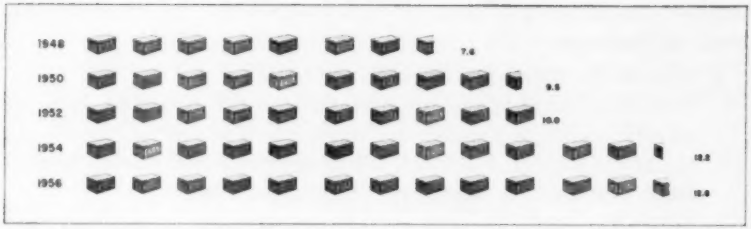

Figure 5. Cases of eggs required to pay monthly wages (with house) of hired men. It took more eggs to pay the wages of a hired man in 1956 than ever before. Since wages are likely to remain high, poultrymen must increase the amount of eggs and meat produced per man to pay the wages of hired help and to have enough left to pay other bills.

How many eggs to produce per man

Two suggestions have been made for specialized poultry farms. First, they should have from 3,000 to 5,000 layers per man. Secondly, egg production should be around 240 eggs per layer. With 3,000 layers and 240 eggs per layer, you get a goal for eggs produced per man of 60,000 dozens on specialized poultry farms. This goal is high and is presently achieved by few poultrymen. The number will increase. If other enterprises are included in the farm business, the suggested goal per man would be lower.

Solving your problem with labor

Factory workers sell their labor to some company at so much per hour. To get a higher price for their labor, they usually strike. They could, however, get other jobs or produce more goods.

Poultrymen sell their labor also. Not as factory workers, but through the sale of eggs and poultry meat. To get a higher price for their labor, about all that they can do is to produce more eggs and poultry meat during each working hour. They can't strike easily because (1) the hens can't do without feed and water, and (2) poultrymen know that they, as well as the consumers, would suffer from lack of income and food.

Your problem then is not how to work harder or to get the men to work harder, nor how to pay them less. Rather, it is how to produce more eggs with about the same labor. There are several ways by which you can

improve the efficiency of your own labor as well as that of hired men. Some of them are:

1. Increase the number of layers on the farms.
   This helps because the time required to do most jobs does not increase so fast as numbers are increased. If money to increase the size of the business is limited, selling more eggs and poultry meat at retail with the same labor force likely would help.

2. Provide for more uniform use of labor throughout the year.
   This might be accomplished by raising pullets during the fall and winter months.

3. Make use of as much mechanical equipment as you can.
   The more nearly automatic such equipment is the better. Automatic watering equipment reduces the watering job to almost nothing if all water has been carried to the hens. Heating cables make year-around automatic watering possible. An elevator to raise the feed to a bin at the top of the laying house and chutes to return it to the pens save time and steps. Mechanical feeders can be used to feed the flock. An elevator could be used to move pullets into, and cull hens out of, the laying house. These and many other types of equipment help to make poultry farming easier and to increase the number of chickens for which one man can care.

4. Modernize the pen arrangement.
   Large pens save time in caring for the birds and make more efficient use of equipment, such as waterers and feeders. A pen of 500 birds does not need as many waterers as two pens of 250 birds each.
   Place the feeders in a row so you can service them quickly and easily. There is no need to place feeders in every corner and at every possible angle to get the hens to eat.
   The nests should be placed on one side of the pen if possible. Consider the possibility of roll away nests with the eggs rolling into collecting trays in an aisle outside of the pen. There are many ways to ease the job of egg gathering.

5. Plan your work to get it done on time and to do more than one job each time that you go into the pen.
   Feeding and gathering eggs might well be combined. Checking the automatic watering equipment might be done while you are in the pen doing something else. Often, too much time is spent in going to and coming from pens.

6. Manage your help properly.
   This means to get the right man for the job and pay him what he is worth. Teach him how to do things and how to keep records. Provide him with satisfactory living conditions. This will encourage him to stay with you rather than to start looking for another job.

Mortality (deaths)

More is known about poultry diseases now than a few years ago. Moreover, volumes have been written and untold millions of words spoken about poultry diseases during the past few years. Yet, the average death rate in the laying flocks remains quite high. Studies of commercial poultry farms in the early 1930's showed that about 24 layers of each 100 kept died during the year. In a 1957–1958 study, 15 layers out of each 100 died.

The death rate of chicks has dropped considerably. In the early 1930's about 25 out of each 100 died. In 1957–1958 only about 8 chicks out of 100 died.

Chickens can get sick easily. They can die quickly, and often before you have had time to find the cause. One chicken is not worth so much as the usual veterinarian's fee. Then too, not all veterinarians are trained to handle poultry diseases. As a result, an unhealthy chicken usually is not treated. A cow is worth far more than the veterinarian's fee and, when she gets sick, you get a veterinarian at once. Yet, one chicken may have a disease that will quickly spread to the rest of the flock.

Relation to income

In general, the higher the death rate in the laying flock the lower your income.

When a layer dies, you lose two things: her sale value which might be enough to buy a replacement chick, and her egg-producing ability. This means that you have fewer layers for which to care and fewer eggs to gather and sell. Yet, many of the costs in poultry farming continue unchanged. For the remainder of the flock to return the same profit, they have to do a better job. Often this is not possible.

A goal for your poultry farm

You must control the death rate. While you cannot avoid some deaths, you can control the number. Your job then should be to keep the death rate in your flock at least below the average for those farms studied in New York State. The farther below average you can keep the death rate and still get good production, the better.

Keeping the death rate low

Keeping the death rate low is no easy job. This is especially true when you have to guard against dozens of diseases, at least half a dozen internal parasites, and numerous chicken-killing animals.

A program to control the death rate on your farm should include at least the following:

1. Buy disease-free chicks and rear them in isolation from old birds.
2. Provide adequate space for chicks and layers.
3. Raise replacement chicks in confinement, if possible.
4. Rotate the poultry range, if range rearing is practiced.
5. Cull diseased chicks and layers promptly.
6. Practice good sanitation, cleaning up thoroughly and disinfecting brooding and laying quarters between flocks.
7. Dispose of dead birds and manure promptly and properly.
8. Send diseased birds to laboratories for speedy and accurate diagnosis.
9. Apply preventive medicines. This includes proper vaccination practices and the proper use of medicated feeds.
10. Control chicken-killing animals, such as rats, foxes, and owls.

Feed Efficiency

Feed expense accounts for about 60 percent of the cost of producing eggs. Therefore, it is essential that poultrymen produce as many eggs on as little feed as possible.

As the rate of production increases, pounds of feed used per dozen eggs decreases. Most of the feed a hen eats goes to keep her alive and happy, while relatively little goes for egg production.

A study of 104 poultry farms in New York in 1957–1958 showed some poultrymen producing a dozen eggs with a yearly average of only four pounds of feed, while others were using twice as much feed per dozen eggs produced.

Feed efficiency can be improved in several important ways:

1. Increase egg production per hen.
2. Cut down on feed waste.
3. Reduce mortality.
4. Use high efficiency feeds.
5. Insulate buildings.

Use of Capital

A poultryman has a lot of money invested in his poultry farm. The average for commercial poultry farms in 1957–1958 was about $43,000. About two-thirds of this was in buildings and land, and one-third in poultry, equipment, feed, supplies, and other livestock. It is important then that the investment be used efficiently.

Relation to income

A measure of the efficiency with which capital is used is the number of years it takes for the receipts to equal the money invested in the farm. Over the years, poultry farmers who have used their capital most efficiently have had higher incomes than those who did not use their capital efficiently.

In general, the poultry farmers that used capital most efficiently had large businesses and good rates of production. Those that did not use capital efficiently had small businesses and low rates of production.

How efficiently should capital be used

Your job is to use the money invested in your farm just as efficiently as you can. In general, not more than one and one-fourth years should be required for the receipts to equal the capital investment. This means that you (1) should not purchase costly equipment that has not been proved, and (2) should not build super-fancy laying houses.

Efficient use of capital does not mean buying cheap chicks. Usually cheap chicks are a poor investment, while chicks that cost more are a good investment. Keep your buildings and equipment in nearly full use throughout the year. Do a good job of marketing your eggs and poultry meat.

All Six Factors

It is not enough for your poultry farm to be above average in only one or two of these factors. For highest income over a long period of years, you should be above average in each of these six ways. In general, the farther above average the better.

THE JOB FOR YOU

Your job as operator of a poultry farm is to find how your business ranks according to these six factors. In other words, find how well each "cylinder" is firing. Then, correct those factors, or "cylinders," that are not firing well. To do this, you need to (1) keep a good set of records on your poultry flock, and (2) study these records to find the weak points in

your business. Then do something about those that are limiting the income you make from poultry farming.

Records to Keep

One way to find whether you are keeping the hens or the hens are keeping you, and how well they are doing it, is from your records.

Records may be used to:

1. List when things happened, and to show when bills were paid and money was received.
2. File an accurate income-tax return.
3. Study the poultry business to find the good points and the points that need to be improved.
4. Share profits on partnership farms.

You should keep three kinds of records. They are:

1. *Farm inventory.* This is a list of all you own and owe at a given time. The value of each item is listed also. The best date to take an inventory is usually January 1.
2. *Cash account.* This is a list of all farm expenses and receipts. The method of keeping a cash account depends upon the type of cash-account book you have and what you want it to show.
3. *Production record.* This is a daily record that shows how many eggs were produced and how many hens died or were culled. The best place to keep this type of record is on the hen-house door. The entries are made as you leave the hen house. As a result, they are not forgotten. At the same time, you can compare the figures for the day with those for other days to see how the flock is doing.

Standards to Beat

Find from your records (1) the average number of layers you have for the year, (2) the number of eggs you get per layer, (3) the number of eggs you produce per man, (4) the death rate, (5) how many pounds of feed are required to produce a dozen eggs, and (6) the number of years required for the receipts to equal the capital. How to figure these items is shown on pages 23 and 24, "chicken arithmetic." All these things are within your control. All affect your income as a poultryman. You should know where you stand and what to improve if you want to become a better poultryman.

Standards with which to compare your business are given below. The first column has figures that represent the average for commercial poultry farms in the State, while the second column has figures that represent a goal for you to reach and perhaps to go beyond.

Table 3. STANDARDS FOR COMMERCIAL POULTRY FARMS

Items	Averages for commercial poultry farms	Goal
Number of layers per farm	3,500	9,000
Eggs laid per layer	210	250
Dozen eggs produced per man	35,000	60,000
Mortality (death rate, percent):		
Of layers	16	6
Of chicks	8	2
Feed efficiency (lbs. feed/doz. eggs):		
Light breed layers	5.8	4.2
Heavy breed layers	6.6	4.7
Years for receipts to equal capital	1½	1¼

Poultry farming, now more than ever before, is a business, and sound business principles and standards must be applied. Now is the time for you to study your business and to get it in as strong a position as possible.

"CHICKEN ARITHMETIC"

Suggested ways to figure some important factors for your poultry farm:

	EXAMPLE	YOUR FARM
1. *Average number of layers for year:*	$\frac{\text{53,073 total hens of 13 inventories}}{13} = 4{,}083$	$\frac{\text{____ total hens of 13 inventories}}{13} = \text{____}$
2. *Number of eggs produced per layer:*	$\frac{\text{814,632 eggs produced}}{\text{4,083 average number layers}} = 199$	$\frac{\text{____ eggs produced}}{\text{____ average number layers}} = \text{____}$
3. *Number of eggs sold per layer:*	62,147 dozens sold x 12 = 745,764 eggs	____ dozens sold x 12 = ____ eggs
	$\frac{\text{745,764 eggs sold}}{\text{4,083 average number layers}} = 183$	$\frac{\text{____ eggs sold}}{\text{____ average number layers}} = \text{____}$
4. *Mortality as percentage of average number of layers:*	$\frac{\text{1,206 layers died}}{\text{4,083 avg. no. layers}} = 0.30 \times 100 = 30$	$\frac{\text{____ layers died}}{\text{____ avg. no. layers}} = \text{____} \times 100 = \text{____}$
5. *Mortality as percentage of number of chicks started:*	$\frac{\text{210 chicks died}}{\text{3,120 chicks started}} = 0.07 \times 100 = 7$	$\frac{\text{____ chicks died}}{\text{____ chicks started}} = \text{____} \times 100 = \text{____}$

6. *Average number of men working on the farm (man equivalent):*

Operator	12 months	Operator	____ months
Operator's family	3 months	Operator's family	____ months
Hired man	3 months	Hired man	____ months
Total	18 months	Total	____ months

$\frac{\text{18 months of labor}}{12} = 1.5$ | $\frac{\text{months of labor}}{12} = $ ____

7. *Dozens of eggs sold per man:*

$\frac{\text{62,147 dozens sold}}{\text{1.5 man equivalent}} = 41{,}431$ | $\frac{\text{dozens sold}}{\text{man equivalent}} = $ ____

8. *Price received per dozen eggs sold:*

$\frac{\$28{,}581 \text{ received for eggs}}{\text{62,147 dozens sold}} = \$0.46$ | $\frac{\$ \text{ received for eggs}}{\text{dozens sold}} = \$$ ____

9. *Pounds of feed per dozen eggs produced:*

$\frac{\text{407,316 pounds feed}}{\text{67,886 dozen eggs produced}} = 6.0$ | $\frac{\text{pounds feed}}{\text{dozen eggs produced}} = $ ____

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